

Discipline: Drilling Engineering	Semester: 5th Semester	Name of the Teaching Faculty: Er. Brushabhanu Sahoo, Lecturer Stage-I	
Subject(Lab): DRILLING FLUID AND CEMENTING TECHNOLOGY LAB Subject Code: DEPC307	No. of Periods / week: 04	Session: 2026-27 (Winter 2026) No. of weeks: 15 Semester from date 01.07.2026 to 05.11.2026	
Week	Class Day	Practical Topics	Remarks
1 st	1 st	Determination of mud rheology (Viscosity, Gel strength, and Yield point etc.) using a Rheometer.	
	2 nd	Determination of mud rheology (Viscosity, Gel strength, and Yield point etc.) using a Rheometer.	
	3 rd	Determination of mud rheology (Viscosity, Gel strength, and Yield point etc.) using a Rheometer.	
	4 th	Determination of mud rheology (Viscosity, Gel strength, and Yield point etc.) using a Rheometer.	
2 nd	1 st	Measurement of drilling fluid weight using a Mud Balance.	
	2 nd	Measurement of drilling fluid weight using a Mud Balance.	
	3 rd	Measurement of drilling fluid weight using a Mud Balance.	
	4 th	Measurement of drilling fluid weight using a Mud Balance.	
3 rd	1 st	Evaluation of viscosity, yield point, gel strength development over time etc. using a Fann VG meter.	
	2 nd	Evaluation of viscosity, yield point, gel strength development over time etc. using a Fann VG meter.	
	3 rd	Evaluation of viscosity, yield point, gel strength development over time etc. using a Fann VG meter.	
	4 th	Evaluation of viscosity, yield point, gel strength development over time etc. using a Fann VG meter.	
4 th	1 st	Viscosity testing of drilling fluid using a Marsh Funnel Viscometer.	
	2 nd	Viscosity testing of drilling fluid using a Marsh Funnel Viscometer.	
	3 rd	Viscosity testing of drilling fluid using a Marsh Funnel Viscometer.	
	4 th	Viscosity testing of drilling fluid using a Marsh Funnel Viscometer.	
5 th	1 st	Analysis of viscosity and gel strength using a Rotational Viscometer.	
	2 nd	Analysis of viscosity and gel strength using a Rotational Viscometer.	
	3 rd	Analysis of viscosity and gel strength using a Rotational Viscometer.	
	4 th	Analysis of viscosity and gel strength using a Rotational Viscometer.	
6 th	1 st	Shear strength measurement of drilling fluids using a Shearometer.	
	2 nd	Shear strength measurement of drilling fluids using a Shearometer.	
	3 rd	Shear strength measurement of drilling fluids using a Shearometer.	
	4 th	Shear strength measurement of drilling fluids using a Shearometer.	
7 th	1 st	Sand content analysis in drilling mud using a Sand Content Set.	
	2 nd	Sand content analysis in drilling mud using a Sand Content Set.	
	3 rd	Sand content analysis in drilling mud using a Sand Content Set.	
	4 th	Sand content analysis in drilling mud using a Sand Content Set.	
8 th	1 st	Determination of mud weight, specific gravity, and hydrostatic gradient using a Mud Balance.	
	2 nd	Determination of mud weight, specific gravity, and hydrostatic gradient using a Mud Balance.	
	3 rd	Determination of mud weight, specific gravity, and hydrostatic gradient using a Mud Balance.	
	4 th	Determination of mud weight, specific gravity, and hydrostatic gradient using a Mud Balance.	

9 th	1 st	API filtration loss testing using a Standard Filter Press, Determination of the loss of liquid from a mud.	
	2 nd	API filtration loss testing using a Standard Filter Press, Determination of the loss of liquid from a mud.	
	3 rd	API filtration loss testing using a Standard Filter Press, Determination of the loss of liquid from a mud.	
	4 th	API filtration loss testing using a Standard Filter Press, Determination of the loss of liquid from a mud.	
10 th	1 st	Measurement of a drilling mud cake and evaluate resistivity using a Resistivity Meter.	
	2 nd	Measurement of a drilling mud cake and evaluate resistivity using a Resistivity Meter.	
	3 rd	Measurement of chloride concentration and filtrate alkalinity (hydroxyl, carbonate, and bicarbonate).	
	4 th	Measurement of chloride concentration and filtrate alkalinity (hydroxyl, carbonate, and bicarbonate).	
11 th	1 st	Determination of bentonite content and cation exchange capacity in drilling fluids.	
	2 nd	Determination of bentonite content and cation exchange capacity in drilling fluids.	
	3 rd	Study of the impact of sodium chloride concentration on resistivity using a Resistivity Meter.	
	4 th	Study of the impact of sodium chloride concentration on resistivity using a Resistivity Meter.	
12 th	1 st	Determination of initial and final setting time of cement slurry using a Vicat Needle Apparatus.	
	2 nd	Determination of initial and final setting time of cement slurry using a Vicat Needle Apparatus.	
	3 rd	Measurement of pH and Electrical Conductivity of Drilling Fluids using pH Meter and Conductivity Meter.	
	4 th	Measurement of pH and Electrical Conductivity of Drilling Fluids using pH Meter and Conductivity Meter.	
13 th	1 st	Measurement of pH and Electrical Conductivity of Drilling Fluids using pH Meter and Conductivity Meter.	
	2 nd	Measurement of pH and Electrical Conductivity of Drilling Fluids using pH Meter and Conductivity Meter.	
	3 rd	Drilling fluid contamination test (Salt, Gypsum & Cement contamination) and their effect on the drilling fluid properties.	
	4 th	Drilling fluid contamination test (Salt, Gypsum & Cement contamination) and their effect on the drilling fluid properties.	
14 th	1 st	Measurement of solid and liquid content and emulsification characteristics of drilling fluid.	
	2 nd	Measurement of solid and liquid content and emulsification characteristics of drilling fluid.	
	3 rd	Measurement of solid and liquid content and emulsification characteristics of drilling fluid.	
	4 th	Measurement of solid and liquid content and emulsification characteristics of drilling fluid.	
15 th	1 st	Measurement of compressive strength of cement test moulds and effect of temperature and pressure on setting of the slurry.	
	2 nd	Measurement of compressive strength of cement test moulds and effect of temperature and pressure on setting of the slurry.	
	3 rd	Measurement of compressive strength of cement test moulds and effect of temperature and pressure on setting of the slurry.	
	4 th	Measurement of compressive strength of cement test moulds and effect of temperature and pressure on setting of the slurry.	

Signature
25/06/26
Lecturer (Stage-I)
Drilling Engineering
O.S.M.E., Keonjhar

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Signature
25/6/26
I/c Head of the Department
Drilling Engineering
O.S.M.E., Keonjhar

Signature
PRINCIPAL
Orissa School of Mining Engineering
KEONJHAR